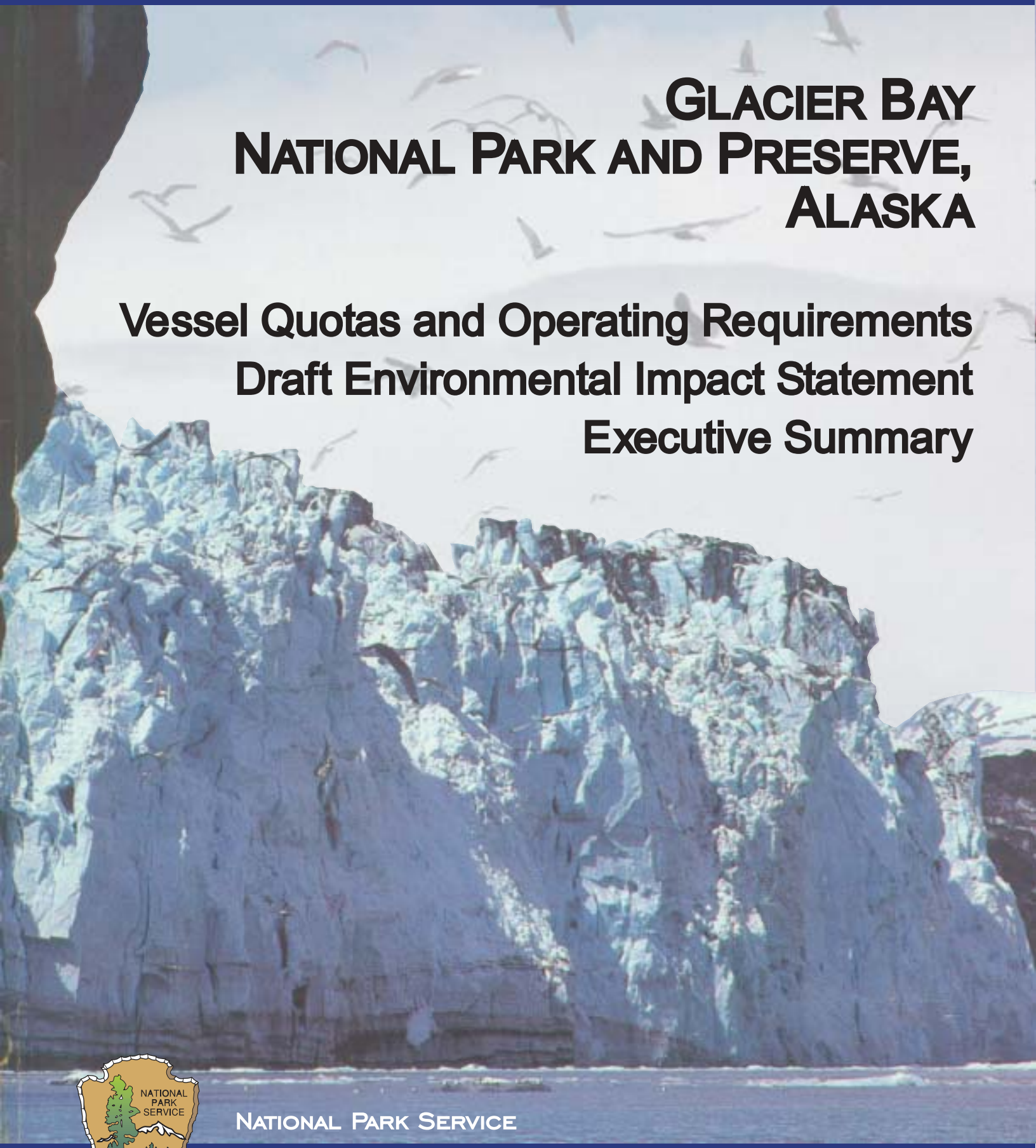


Glacier Bay National Park and Preserve, Alaska

Vessel Quotas and Operating Requirements
Draft Environmental Impact Statement
Executive Summary

National Park Service

Glacier Bay National Park and Preserve, Alaska
United States Department of the Interior

Cover Photograph by Mark Kelley • *www.markkelley.com*

United States Department of the Interior

NATIONAL PARK SERVICE
Glacier Bay National Park and Preserve

March 14, 2003

Dear Reader:

The National Park Service (NPS, also "the Park Service") has prepared a Draft Environmental Impact Statement (DEIS) for Vessel Quotas and Operating Requirements in Glacier Bay National Park and Preserve. This DEIS describes five alternatives for establishing motorized vessel quotas and associated operating requirements within Glacier Bay and Dundas Bay. The DEIS was prepared in response to direction by the U.S. Congress as well as new operational needs since 1996.

We invite your comments on the DEIS. Your ideas and suggestions will help set vessel quotas and operating requirements that protect park and preserve resources and provide for visitor use and enjoyment.

Commenting: Specific comments on the alternatives and analysis will be most helpful. Based on your comments, a final EIS will be prepared followed by a decision. We anticipate a decision no later than January 1, 2004. Please send your written comments to:

Glacier Bay National Park and Preserve Vessel DEIS
C/O Nancy Swanton
EIS Project Manager
2525 Gambell Street
Anchorage, Alaska 99503-2892

In addition, you may submit comments on the Park Service's website at http://www.nps.gov/glba. Click on "Vessel Management Draft EIS" under "News & Events."

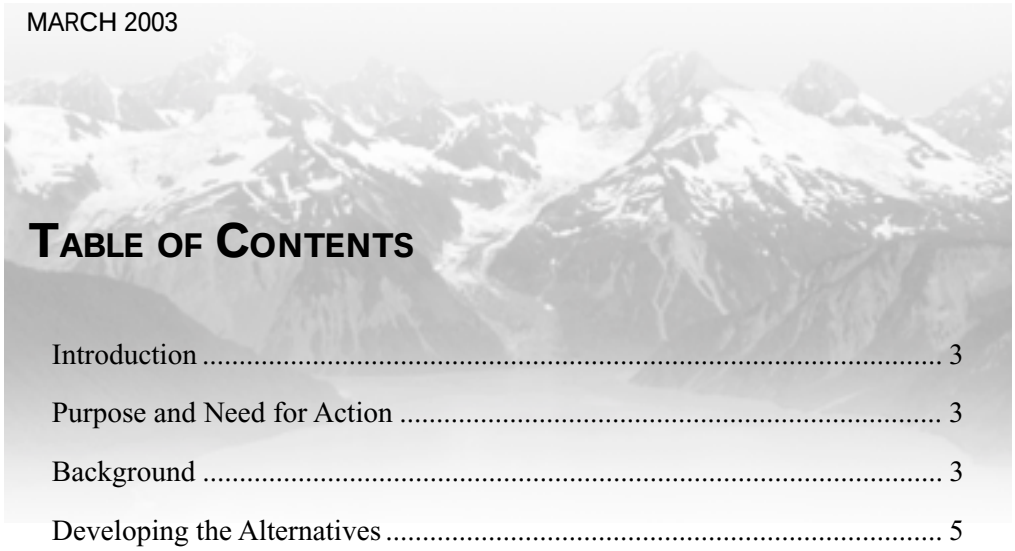
Open Houses/Public Hearings: The Park Service will host informational open houses/public hearings in mid-April in the following locations: Anchorage, Juneau, Hoonah, Gustavus, Pelican, and Elfin Cove, Alaska, and Seattle, Washington. These meetings will be designed to facilitate dialogue between you and the Park Service regarding your questions and comments on the DEIS. An informational open house will precede each public hearing. Details on the time and place of each open houses/public hearings will be posted on the Park Service's website when available, and will be published in local newspapers, announced on local radio stations, and posted in local post offices.

This is an important opportunity for you to comment on the DEIS for Glacier Bay National Park and Preserve. We look forward to receiving your comments.

Tomie Patrick Lee
Superintendent

EXECUTIVE SUMMARY

MARCH 2003



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GLACIER BAY

NATIONAL PARK AND PRESERVE, ALASKA

VESSEL QUOTAS AND OPERATING REQUIREMENTS • DRAFT ENVIRONMENTAL IMPACT STATEMENT

INTRODUCTION

The National Park Service (NPS, also "the Park Service") proposes to establish new or keep existing quotas (limits) and operating requirements for four types of motorized watercraft – cruise ships, and tour, charter, and private vessels – within Glacier Bay and Dundas Bay in Glacier Bay National Park and Preserve. The draft environmental impact statement (EIS) was prepared, as required, under the National Environmental Policy Act (NEPA) of 1969. It describes four action alternatives and a no action alternative and contains a detailed analysis of the environmental consequences of each alternative.

PURPOSE AND NEED FOR ACTION

The purpose for action is to address the continuing demand for motorized watercraft access into Glacier Bay and Dundas Bay (see figure 1) in a manner that ensures continuing protection of park and preserve resources and values while providing for a range of high-quality recreational opportunities for visitors. The Park Service seeks to develop a system of vessel quotas and operating requirements for the park and preserve that will guide management of vessel traffic. Implementation of vessel quotas and operating requirements may require promulgation of regulations.

The need for action stems from legislation enacted in 2001, wherein the U.S. Congress directed the Park Service to set the maximum level of motorized vessel entries based on the analysis in the EIS. Reevaluation of vessel quotas and operating requirements is required to address the continuing demand for vessel entries and park and preserve visitation. The Park Service desires, through the planning process and EIS, to comprehensively address issues and concerns associated with vessel management in the park and preserve.

BACKGROUND

Measures to address vessel traffic in Glacier Bay were implemented in 1979. Temporary regulations went into effect in 1980 and permanent regulations were promulgated in 1985 to respond to concerns about the effects motor vessels may have on the then endangered humpback whale (the humpback whale has since been "downlisted" to threatened). Since then, concerns have broadened to encompass potential effects on other animals, the physical environment, and visitor experience.

In 1996, the Park Service completed a revised environmental assessment (EA) and issued a finding of no significant


Planning Area of the
Vessel Quota and Operating Requirements
Environmental Impact Statement
Figure 1
National Park Service
U.S. Department of
the Interior
Tarr Inlet
Rendu Inlet
Muir Inlet
Johns Hopkins Inlet
West Arm
Wachusett Inlet
East Arm
Adams Inlet
Hugh Miller Inlet
Scidmore Bay
Charpentier Inlet
Glacier Bay
Planning Area =
Glacier Bay & Dundas Bay
Geikie Inlet
N
W
E
S
Bartlett Cove
Dundas Bay
Taylor Bay
Pt. Carolus
Pt. Dundas
Pt. Gustavus
Icy Strait
Pt. Wimbledon
Gulf of Alaska
Planning Area of the Vessel Quota and Operating Requirements Environmental Impact Statement
Boundary of Glacier Bay National Park & Preserve
Glacier Bay National Park and Preserve
Vessel Quotas and Operating Requirements Environmental Impact Statement
5 0 5 10 Miles

impact regarding vessel quotas and operating requirements that, among other things, provided for increases in cruise ships, charter vessels, and private vessels in Glacier Bay. The decision provided for an incremental increase in cruise ships – from 139 up to 184 ships – over the June through August season (ultimately, up to two cruise ships per day, every day, over those three months). Any increase would be contingent upon the completion of studies demonstrating that such increases would be consistent with the park and preserve's purposes and values. Regulations were promulgated in May 1996 to implement the decision.

In a May 1997 complaint filed in the U.S. District Court, the National Parks Conservation Association challenged the validity of the Park Service's 1996 finding of no significant impact. The U.S. District Court upheld the decision made by the Park Service. Following an appeal, the U.S. Ninth Circuit Court of Appeals determined in February 2001 that the portion of the 1996 EA and the implementing regulations that authorized an increase in vessels into Glacier Bay violated NEPA because an EIS was not prepared. The court returned vessel numbers to pre-1996 levels pending preparation of an EIS. In November 2001, Public Law 107-63 required the Park Service to prepare an EIS by January 1, 2004, to identify and analyze the possible effects of the 1996 increases and set the maximum level of vessel entries into Glacier Bay based on the analysis in the EIS. Until the level of vessel entries are set based on the EIS, the U.S. Congress provided that the number of vessel entries into Glacier Bay would be the same as in effect during the 2000 calendar year and that the Park Service's 1996 decision and regulations relating to vessel entries were approved and would be in effect. The court modified its decision accordingly.

DEVELOPING THE ALTERNATIVES

The Park Service communicated with representatives from several government agencies, a tribal government, organizations, businesses, and the general public while developing the range of alternatives for the EIS. The scoping period began on February 22, 2002, with publication in the *Federal Register* of a notice of intent (NOI) to prepare an EIS. Another notice published in the *Federal Register* on May 6, 2002, extended the scoping period to June 7, 2002. During scoping, the Park Service published a brochure inviting the public to participate in the scoping process and providing basic information about the NEPA process, the preliminary issues and actions under consideration, and how the public could participate in the process. The brochure included a comment form, and the Park Service provided electronic versions of

both the brochure and the comment form on the Park Service website.

The Park Service hosted public meetings from May 20 through May 30, 2002, in Hoonah, Gustavus, Pelican, Elfin Cove, Anchorage, and Juneau, Alaska, and in Seattle, Washington. Meeting participants could review displays, maps, and literature, and speak directly with members of the EIS project team.

The Park Service conducted internal scoping meetings at Park Service headquarters on April 19 and May 9, 2002. In addition, the EIS project team met with representatives from the U.S. Geological Survey (USGS) Alaska Science Center on May 9 and 10, 2002; with representatives from several State of Alaska agencies on May 15 and May 28, 2002; with a representative from the National Oceanic and Atmospheric Association Fisheries (formerly the National Marine Fisheries Service) on May 29, 2002; and with the board of the Hoonah Indian Association on May 20, 2002. The Hoonah Indian Association is a federally-recognized tribal government.

ACTIONS CONSIDERED IN THE DRAFT EIS

As a result of scoping, topics and actions were identified to be considered in the draft EIS. Identified for inclusion in the alternatives are:

- establishment of vessel quotas and designation of quota seasons.
- defining vessel classification criteria.
- exemptions of certain vessels from the quota system.
- vessel travel routes and waters closed to motorized vessel use.
- vessel speed restrictions and speed measurement methods.

The topics identified for inclusion in the effects analysis include:

- surface and underwater soundscape.
- air quality.
- water quality.
- threatened and endangered species.
- marine mammals.
- marine birds and raptors.
- marine fishes.
- coastal/shoreline environments and biological communities.
- cultural and historical resources.
- opportunity for and quality of visitor experiences.
- vessel use and safety.
- wilderness resources.
- local and regional socioeconomics.

THE ALTERNATIVES

The Park Service is considering five alternatives for achieving the purpose and need for action, including a no action alternative. Each alternative defines different entry quotas (limits) and/or operating requirements for four types of motorized watercraft: cruise ships, and tour, charter, and private vessels. The draft EIS is responding to needs related specifically to managing commercial and private motorized vessels used for visitor recreational purposes, and the alternatives considered have a number of elements in common.

Actions Common to all Alternatives

Vessel Quotas

Quotas define the maximum number of motorized vessels allowed in Glacier Bay and/or Dundas Bay, set by vessel class (i.e., cruise ship, tour vessel, charter vessel, and private vessel). Quotas are set by day and by season. All alternatives establish daily limits for each vessel type. For alternatives 1, 2, and 3, two types of seasonal quotas are used: seasonal entries and seasonal-use days.

A seasonal limit may result in daily use that is less than the maximum daily use allowed. For example, under existing conditions, a maximum of two cruise ships per day are allowed into Glacier Bay year-round. However, from June through August (a 92-day period), 139 cruise ships are allowed into Glacier Bay, for a daily average of 1.5 cruise ships per day. On certain days, no cruise ships enter the Bay.

With respect to vessel quotas, all alternatives:

- use permits to regulate vessel numbers in Glacier Bay.
- set quotas for motorized vessel use of Glacier Bay for cruise ships and tour, charter, and private vessels.
- allow a maximum of two cruise ships to enter Glacier Bay per day year-round.
- allow for one entry to Bartlett Cove for the ferry service from Juneau – with the sole purpose of accessing park and preserve and other authorized visitor services or facilities at, or originating from, the public dock area at Bartlett Cove.

In addition, under all alternatives, no permit is required by the following types of vessels for entry into Glacier Bay:

- administrative vessels, including vessels operated by the Hoonah Indian Association, and research vessels (though research vessels must obtain a research permit).
- vessels granted safe harbor in Bartlett Cove by the superintendent based on hazardous conditions, such as weather or mechanical problems.
- skiffs launched from a permitted motor vessel and operated while the

permitted vessel remains at anchor (and skiffs launched to take photographs for marketing materials in accordance with a valid concessions or commercial use permit).
- commercial fishing vessels otherwise permitted and engaged in commercial fishing.

Vessel Operating Requirements

Vessel operating requirements are set to protect resources. Under all alternatives, the approach distances in the current regulations (36 Code of Federal Regulations 13.65) would be retained for seabird nesting colonies, specified islands and waters, and harbor seal and Steller sea lion haul-outs. The waters of lower Glacier Bay would continue to be designated whale waters for all alternatives. The current noise restrictions would continue. The following also would continue for all alternatives:

- The superintendent may designate temporary whale waters and impose motor vessel speed restrictions in whale waters.
- In designated whale waters, operators of motor vessels over 18 feet in length will, in all cases where the width of the water permits, maintain a distance of at least 1 nautical mile from shore, and, in narrower areas will navigate in mid-channel. Unless other restrictions apply, operators may perpendicularly approach or land on shore (i.e., by the most direct line to shore) through designated whale waters.
- All vessels are prohibited from operating within 0.25 nautical mile of a humpback whale or pursuing or attempting to pursue humpback whales within 0.5 nautical mile in marine waters within the boundary of the park and preserve.
- Notwithstanding any other operating restriction set out in the current regulations, "due to the rapidly emerging and changing ecosystems of, and for the protection of wildlife in Glacier Bay National Park and Preserve, . . . the superintendent may establish, designate, implement and enforce restrictions and public use limits and terminate such restrictions and public use limits."

Vessel speed restrictions are a part of each alternative, though the actual speed and/or the method of measuring speed are different under certain alternatives.

The following waters are closed seasonally to motor traffic under each alternative (although the "season" is defined differently under some of the alternatives):

- Johns Hopkins Inlet.
- Adams Inlet.
- Rendu Inlet.
- Hugh Miller complex (Scidmore / Charpentier Inlet west of the wilderness boundary).
- Waters in the Beardslee Island group.
- Muir Inlet (north of McBride Glacier).
- Wachusett Inlet.

Actions Specific to Each Alternative

The following sections outline the specific quotas and operating requirements for each of the five alternatives. Table 1 provides an overview of the alternatives. Tables 2 and 3 present vessel quotas for each alternative. Figures 2, 3, and 4 illustrate the operating requirements for the alternatives. Text describing each alternative follows the tables and figures.

TABLE 1: OVERVIEW OF ALTERNATIVES EVALUATED IN THE ENVIRONMENTAL IMPACT STATEMENT

Alternative	Vessel Quotas[a]	Operating Requirements
Alternative 1 (no action alternative)	For Glacier Bay: Current quotas and quota season.	Current operating requirements.
Alternative 2	For Glacier Bay: 1985-authorized quotas (those in effect in 1996). Current quota season.	Current operating requirements.
Alternative 3 (NPS preferred alternative)	For Glacier Bay: Current quotas with a provision to increase seasonal quotas for cruise ships. Current quota season.	Current operating requirements.
Alternative 4 (environmentally preferred alternative)	For Glacier Bay[b]: Current daily quotas for cruise ships; slightly reduced daily quotas for tour, charter, and private vessels. Reduced seasonal-use days for cruise ships, and tour and charter vessels; slightly increased number of seasonal-use days for private vessels. Quota season lengthened (May 1–Sept 30) for all vessel classes. For Dundas Bay: Cruise ships and tour vessels not permitted. Vessel quotas initiated for charter vessels. No limits for private vessels.	Revised operating requirements, including seasonal-entry quotas, not applicable; limited closures of certain waters to cruise ships and tour vessels; decreased vessel speed for large vessels.
Alternative 5	For Glacier Bay[b]: Current daily quotas and quota season for cruise ships, and tour, charter, and private vessels. Current number of seasonal-use days for cruise ships and tour and charter vessels during the current quota season. Decreased number of seasonal-use days for cruise ships during May and September. Increased number of seasonal-use days for private vessels. For Dundas Bay: Cruise ships not permitted. Vessel quotas initiated for tour and charter vessels. No limits for private vessels.	Revised operating requirements, including seasonal-entry quotas, not applicable; limited closures of certain waters to cruise ships and tour vessels; decreased vessel speed for large vessels; and use of "speed over ground" as a measure of speed.

[a] For alternatives 1, 2, and 3, vessel quotas and operating requirements apply to Glacier Bay. For alternatives 4 and 5, they apply to Glacier Bay and Dundas Bay.

[b] Comparisons are to alternative 1 (no-action alternative).

TABLE 2: COMPARISON OF VESSEL QUOTAS IN GLACIER BAY FOR ALTERNATIVES 1 THROUGH 5

Vessel Class		Alternative 1 [b]		Alternative 2 [b]		Alternative 3 [b]		Alternative 4		Alternative 5	
		June 1 – Aug 31	May and Sept	June 1 – Aug 31	May and Sept	June 1 – Aug 31	May and Sept	June 1 – Aug 31	May and Sept	June 1 – Aug 31	May and Sept
Cruise Ship[a]	Daily Vessel Quota	2	2	2	2	2	2	2	2	2	2
	Seasonal Entries	139	No limit	107	No limit	139 (potentially up to 184)	No limit	NA	NA	NA	NA
	Seasonal-Use Days	139	122	107	122	139 (potentially up to 184)	122	92	61	139	92
Tour Vessel[a]	Daily Vessel Quota	3	3	3	3	3	3	2	2	3	3
	Seasonal Entries	276	No limit	276	No limit	276	No limit	NA	NA	NA	NA
	Seasonal-Use Days	276	183	276	183	276	183	184	122	276	183
Charter Vessel	Daily Vessel Quota	6	No limit	6	No limit	6	No limit	5	5	6	No limit
	Seasonal Entries	312	No limit	271	No limit	312	No limit	NA	NA	NA	NA
	Seasonal-Use Days	552	No limit	511	No limit	552	No limit	460	305	552	No limit
Private Vessel	Daily Vessel Quota	25	No limit	25	No limit	25	No limit	22	22	25	No limit
	Seasonal Entries	468	No limit	407	No limit	468	No limit	NA	NA	NA	NA
	Seasonal-Use Days	1,971	No limit	1,714	No limit	1,971	No limit	2,024	1,342	2,300	No limit

a. Cruise ships and tour vessels are limited to the daily vessel quota year-round.

b. Information is shown for May and September to facilitate comparison with alternatives 4 and 5 where quota season is extended to include May and September (for all classes [alternative 4] and cruise ships only [alternative 5]).

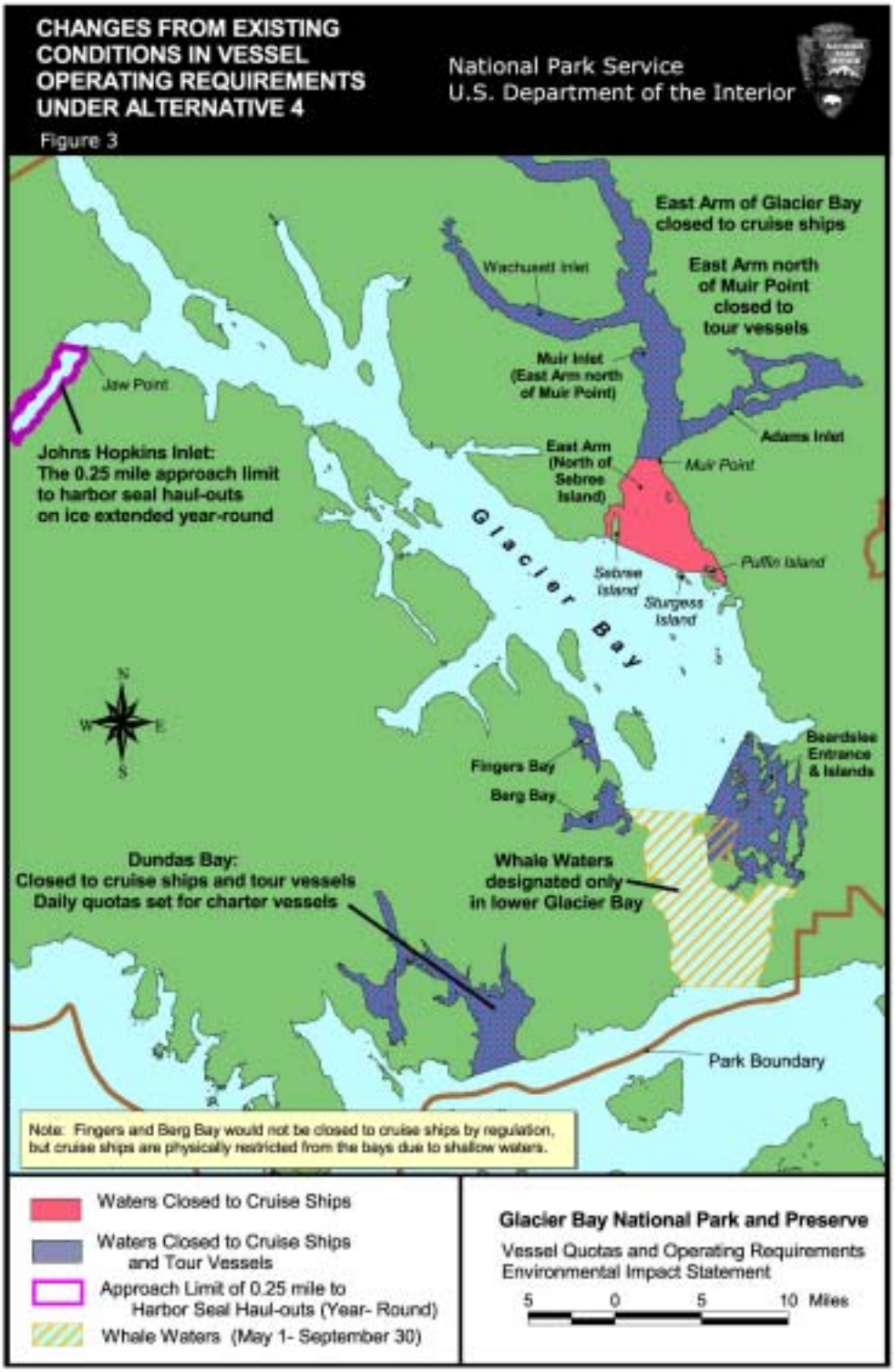
NA = Not applicable.

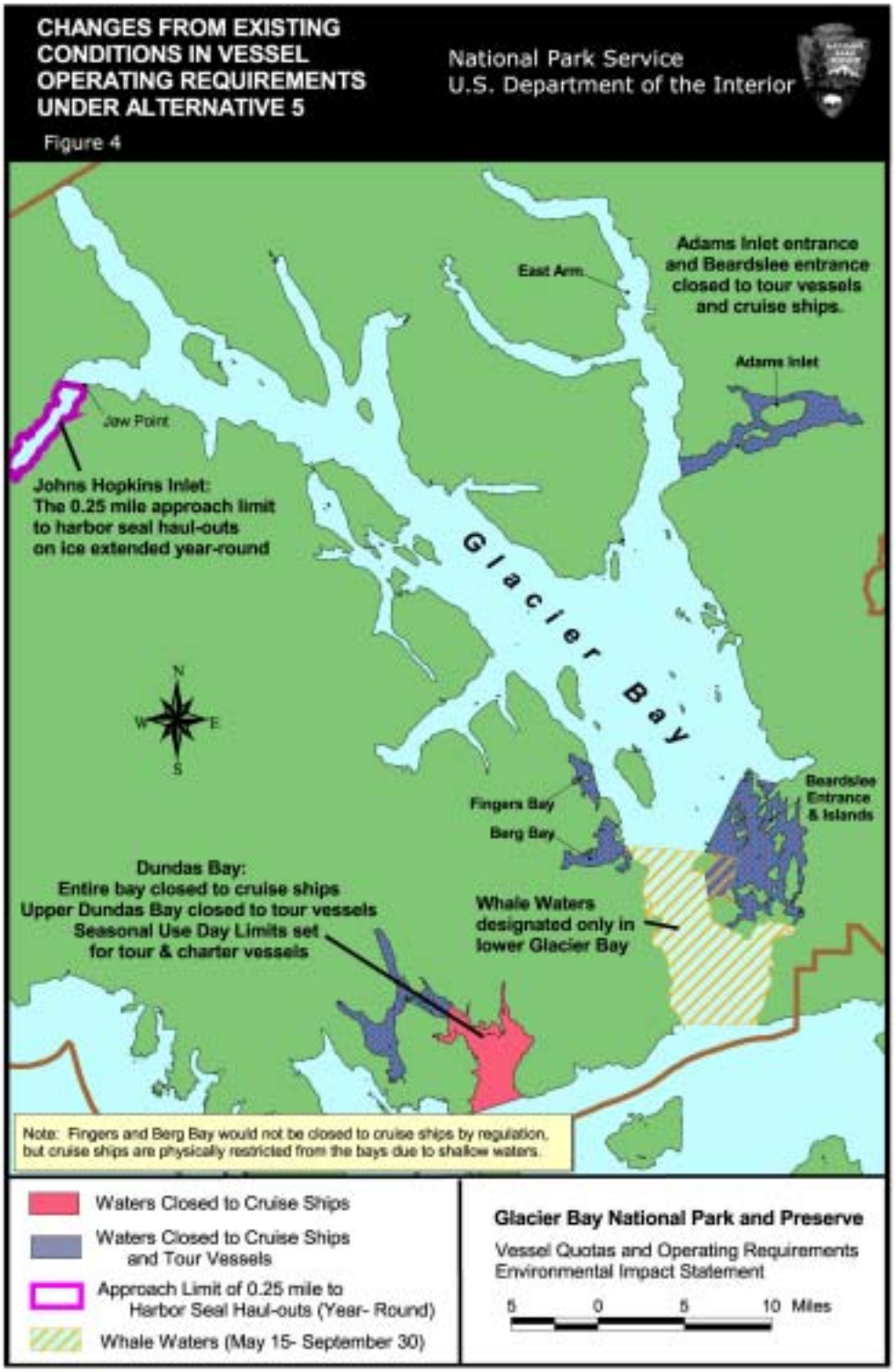
TABLE 3: COMPARISON OF VESSEL QUOTAS IN DUNDAS BAY FOR ALTERNATIVES 1 THROUGH 5

Vessel Class	Quotas	Alternative 1 (No Action)	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Cruise Ship	Daily Vessel Quota	No limit[c]			Not permitted	Not permitted[b]
	Seasonal Entries	No limit[c]			NA	NA
	Seasonal -Use Days	No limit[c]			NA	NA
Tour Vessel	Daily Vessel Quota	No limit			Not permitted	Not permitted in wilderness waters[b]; 1 in non-wilderness waters[c]
	Seasonal Entries	No limit			NA	NA
	Seasonal -Use Days	No limit			NA	Not permitted in wilderness waters[b] 92 in non-wilderness waters[c]
Charter Vessel	Daily Vessel Quota	No limit			3[a]	No limit
	Seasonal Entries	No limit			NA	NA
	Seasonal -Use Days	No limit			459[a]	276[c]
Private Vessel	Daily Vessel Quota	No limit				
	Seasonal Entries	No limit				
	Seasonal -Use Days	No limit				

a. Vessel quota season is May 1 through September 30.
b. This is a year-round limitation.
c. Vessel quota season is June 1 through August 31.
d. Through the NPS competitive allocation of cruise ship permits, existing cruise ship operators have committed to an itinerary that does not include Dundas Bay; however, there are currently no regulations that prohibit cruise ships from entering Dundas Bay.


VESSEL RESTRICTIONS AND OPERATING REQUIREMENTS UNDER ALTERNATIVES 1, 2 & 3
Figure 2
National Park Service
U.S. Department of the Interior
Muir Inlet 6/1- 7/15
Russell Island Passage 6/1- 8/31
Rendu Inlet 5/1- 9/15
Adams Inlet 5/1- 9/15
Wachusett Inlet 7/16- 8/31
Russell Islets
Reid Inlet
Johns Hopkins Inlet All Vessels: 5/1- 6/30 Cruise Ships: 5/1-8/31
0.25 Mile Approach Limit to Harbor Seal Haul-Outs, 7/1-8/31
Blue Mouse Cove
Hugh Miller Inlet Scidmore Bay Charpentier Inlet 5/1- 9/15
Glacier Bay
Caroline Point
Garforth Island
East Arm Entrance 6/1- 8/31
Sebree Island
Lone Island
Geikie Rock
Sturgess Island
Puffin Island
N. Sandy Cove
Leland Island
S. Marble Island
N
W
E
S
Whidbey Passage 6/1- 8/31
Flapjack Island and Islets
Boulder Island
Beardslee Islands 5/1- 9/15
Eider Island
Lower Glacier Bay 5/15-8/31
Dundas Bay
Park Boundary
Note: Vessel restrictions and operating requirements on this figure reflect the existing conditions. Dates shown are those during which restrictions apply.
Waters Closed to All Vessels, Year-Round
Seasonal Non-Motorized (Closed) Waters- (Closures may be based on vessel type)
Seasonal Whale Waters
Seasonal Speed Restricted Areas
Seasonal Noise Restricted Area (10 pm- 6 am, 6/1- 8/31)
Glacier Bay National Park and Preserve
Vessel Quotas and Operating Requirements Environmental Impact Statement
5 0 5 10 Miles


CHANGES FROM EXISTING CONDITIONS IN VESSEL OPERATING REQUIREMENTS UNDER ALTERNATIVE 4
Figure 3
National Park Service
U.S. Department of the Interior
East Arm of Glacier Bay closed to cruise ships
East Arm north of Muir Point closed to tour vessels
Wachusett Inlet
Muir Inlet (East Arm north of Muir Point)
Jaw Point
Johns Hopkins Inlet: The 0.25 mile approach limit to harbor seal haul-outs on ice extended year-round
East Arm (North of Sebree Island)
Adams Inlet
Muir Point
Puffin Island
Sebree Island
Sturgess Island
Glacier Bay
N
W
E
S
Beardslee Entrance & Islands
Fingers Bay
Berg Bay
Dundas Bay: Closed to cruise ships and tour vessels Daily quotas set for charter vessels
Whale Waters designated only in lower Glacier Bay
Park Boundary
Note: Fingers and Berg Bay would not be closed to cruise ships by regulation, but cruise ships are physically restricted from the bays due to shallow waters.
Waters Closed to Cruise Ships
Waters Closed to Cruise Ships and Tour Vessels
Approach Limit of 0.25 mile to Harbor Seal Haul-outs (Year- Round)
Whale Waters (May 1- September 30)
Glacier Bay National Park and Preserve
Vessel Quotas and Operating Requirements Environmental Impact Statement
5 0 5 10 Miles


CHANGES FROM EXISTING CONDITIONS IN VESSEL OPERATING REQUIREMENTS UNDER ALTERNATIVE 5
Figure 4
National Park Service
U.S. Department of the Interior
East Arm
Adams Inlet entrance and Beardslee entrance closed to tour vessels and cruise ships.
Adams Inlet
Jaw Point
Johns Hopkins Inlet: The 0.25 mile approach limit to harbor seal haul-outs on ice extended year-round
Glacier Bay
N
W
E
S
Fingers Bay
Berg Bay
Beardslee Entrance & Islands
Dundas Bay: Entire bay closed to cruise ships Upper Dundas Bay closed to tour vessels Seasonal Use Day Limits set for tour & charter vessels
Whale Waters designated only in lower Glacier Bay
Note: Fingers and Berg Bay would not be closed to cruise ships by regulation, but cruise ships are physically restricted from the bays due to shallow waters.
Waters Closed to Cruise Ships
Waters Closed to Cruise Ships and Tour Vessels
Approach Limit of 0.25 mile to Harbor Seal Haul-outs (Year- Round)
Whale Waters (May 15- September 30)
Glacier Bay National Park and Preserve
Vessel Quotas and Operating Requirements Environmental Impact Statement
5 0 5 10 Miles

ALTERNATIVE 1: NO ACTION

Alternative 1 is the no-action alternative. The current quotas for Glacier Bay, quota season, and operating requirements for all four vessel types would remain in effect under this alternative. The current quotas are those authorized by the U.S. Congress (Public Law 107-63) in November 2001. The quota season in effect is June 1 through August 31, with the exception of the daily quotas for cruise ships and tour vessels, which are in effect year-round.

Current operating requirements would remain in effect (see figure 2).

ALTERNATIVE 2

Under alternative 2, vessel quotas would be those authorized in 1985 (i.e., those in effect in 1995). The quota season would be the same as the one now in place (June 1 through August 31, with daily quotas for cruise ships and tour vessels in effect year-round). This alternative would retain the current daily quotas but decrease the seasonal entries and seasonal-use days for cruise ships, charter vessels, and private vessels. The seasonal quotas for tour vessels would remain the same as they are currently. As compared to vessel quotas currently in place, this alternative would result in:

- a 23% reduction in cruise ship seasonal entries (from 139 to 107).
- a 13% reduction in charter vessel seasonal entries (from 312 to 271).
- a 7% reduction in charter vessel "seasonal-use days" (from 552 to 511).
- a 13% reduction in private vessel seasonal entries (from 468 to 407).
- a 3% reduction in seasonal-use days (from 1,971 to 1,714).

Current operating requirements would remain in effect (see figure 2).

ALTERNATIVE 3: NPS PREFERRED ALTERNATIVE

Alternative 3 would continue the current vessel quotas and would provide for potential future increases in cruise ships up to 184 (a 32% increase) from June through August. The increases would allow up to two cruise ships per day, every day. Any increase in cruise ship numbers would be contingent upon the completion of studies that demonstrate the increases would be compatible with the protection of park and preserve resources and values.

Tour, charter, and private vessel quotas would remain the same as currently allowed. Since 1996, the Park Service has conducted research to determine whether increases are warranted, and

each year, the superintendent reviews the research results. To date, the research has not clearly demonstrated that further increases are warranted. Research would continue, with emphasis on air quality, humpback whales, nesting birds, and visitor experience.

This alternative is identical to alternative 1, except that the cruise ship seasonal-entry quota could increase from 139 entries per season to 184 entries per season.

As with alternatives 1 and 2, vessel operating requirements would follow the existing regulations and the park and preserve compendium.

ALTERNATIVE 4: ENVIRONMENTALLY PREFERRED ALTERNATIVE

Alternative 4 calls for the greatest reduction in cruise ships and tour and charter vessels. Under alternative 4, seasonal limits would change from June through August as follows:

- a 33% reduction in cruise ship seasonal entries (from 139 to 92).
- a 33% reduction in tour vessel daily vessel quota (from 3 to 2) and a 33% reduction in seasonal-use days (from 276 to 184).
- a 17% reduction in charter vessel daily vessel quota (from 6 to 5) and a 17% reduction in charter vessel seasonal-use days (552 to 460).
- a 12% reduction in private daily vessel quotas (from 25 to 22) but a 3% increase in seasonal-use days (from 1,971 to 2,024).

In addition, alternative 4 would expand seasonal limits to include May and September, which would result in a 50% reduction in cruise ships and a 33% reduction in tour vessels during May and September as compared to the current situation. Daily limits for charter and private vessels also would be restricted in May and September to 5 and 22 vessels, respectively. Currently, no limits are set for charter or private vessels during May and September.

Finally, daily limits would be reduced for tour vessels (from 3 to 2), charter vessels (from 6 to 5), and private vessels (from 25 to 22). Total seasonal-use days for private vessels would increase slightly (2.6%, or an additional 53 use days).

Dundas Bay. Alternative 4 would formalize the current use pattern by prohibiting cruise ships in Dundas Bay. Tour vessels also would be prohibited in Dundas Bay. This alternative would establish a daily quota of three for charter vessels in Dundas Bay from May 1 through September 30. Daily vessel quotas would not be set for private vessels because private vessel use has not been an issue in Dundas Bay, nor does the Park Service believe

that it will become an issue over the life of this plan.

Season. Vessel quotas in Glacier Bay and Dundas Bay under alternative 4 would be in effect from May 1 through September 30.

With this alternative, seasonal entries would be eliminated. Currently, when a vessel leaves Glacier Bay it is not permitted to return without obtaining a new permit. Under alternative 4, with the elimination of the seasonal entry quotas, a vessel could leave the Bay and enter again under one permit within a particular calendar day.

Under current regulations, private vessels based in Bartlett Cove that enter and exit Glacier Bay do not count as a daily entry (note that traveling up-Bay from Bartlett Cove counts as an entry). The "based in Bartlett Cove" exemption would be eliminated under alternative 4. In its place, 10 private vessel permits (of the 22 daily permits allowed), called "short-term permits," would be set aside for distribution on a short-notice basis (up to 48 hours). Any individual with a private vessel could obtain one of these permits by making a reservation within 48 hours of when they want to enter Glacier Bay.

Vessel Operating Requirements

Vessel speed regulations would change in two fundamental ways under alternative 4. First, vessel speed limits would be based on vessel length; a year-round speed limit of 13 knots through the water would be placed on all vessels greater than or equal to 262 feet (80 meters) to reduce risks of vessel collisions with whales (essentially all cruise ships). Second, the timeframe for speed limits in whale waters (lower Glacier Bay only) would be extended to May 1 through September 30 (currently May 15 through August 31) to account for the presence of humpback whales throughout the longer period. Motorized vessels less than 262 feet (80 meters) long would be prohibited from operating at more than 20 knots through the water in lower-Bay whale waters. All motor vessels would be subject to operating at no greater than 10 knots through the water when the superintendent has designated a maximum of 10 knots because of the presence of whales.

Whale Waters. Whale waters would be lower Glacier Bay waters only from May 1 through September 30 (see figure 3). In addition, the superintendent also may designate any portion(s) of Glacier Bay and Dundas Bay as temporary whale waters and impose motor vessel speed restrictions in whale waters (same as the current regulations).

Vessel Routes and Destinations (Including Non-Motorized Waters). Routes for cruise ships in Glacier Bay would be defined to

provide more assurance of resource protection, provide a potentially improved backcountry visitor experience, better separate the various vessels in Glacier Bay, and provide an increased margin of safety for avoidance of nearshore collisions. A cruise ship route would be identified using the current typical cruise ship traffic pattern (generally in mid-channel). Non-motorized water designations and seasons would not change.

In addition to the closed waters defined for alternatives 1, 2, and 3, cruise ships also would not be allowed into Beardslee Entrance, Dundas Bay, and the East Arm, defined by an imaginary line drawn from southern Sebree Island to the mainland (see figure 3). Tour vessels would not be allowed into Beardslee Entrance, Muir Inlet (the East Arm of Glacier Bay north of Muir Point), Berg Bay, and Fingers Bay in Glacier Bay or in Dundas Bay.

Johns Hopkins Inlet seasonal closure — Current regulations require motorized vessels to maintain a 0.25-nautical-mile distance from harbor seals hauled out on ice in Johns Hopkins Inlet from June 1 through August 31. Under alternative 4, this requirement would apply year-round.

ALTERNATIVE 5

Alternative 5 would maintain current daily vessel quotas. While the daily quotas for private vessels would remain the same as currently in place, seasonal-use day quotas would increase by 16% (from 1971 to 2300). The seasonal-use days for cruise ships would be extended into May and September. The number of cruise ships that would be allowed in May and September (92) represents the same proportion of use allowed at present from June through August (139 ships/92 days = 92 ships/61 days).

Cruise ships would not be allowed in Dundas Bay on a year-round basis. One tour vessel would be allowed per day in the lower part of Dundas Bay (non-wilderness waters) from June 1 through August 31. Tour vessels would not be allowed within the wilderness waters year-round. Seasonal-use days for charter vessels would be 276, which represent an average of three vessels per day from June through August.

Season. As is currently the case, daily quotas for cruise ships and tour vessels would be in effect year-round in Glacier Bay. Seasonal-use days would apply from May 1 through September 30 for cruise ships. Daily quotas and seasonal-use days for charter and private vessels would continue to be the existing season of June 1 through August 31, as would the seasonal-use days for tour vessels.

The season for vessel quotas in Dundas Bay would be June 1 through August 31, although cruise ships would not be permitted year-round and tour vessels would not be permitted in wilderness waters (upper Dundas Bay on a year-round basis).

Under alternative 5, the exemption for private vessels based in Bartlett Cove that enter and exit Glacier Bay (these are not currently counted as daily entries) would be eliminated and new "short-term permits" would be issued. Anyone could obtain a short-term permit by making a reservation within 48 hours of when they want to enter Glacier Bay.

Alternative 5 shares the revisions to operating requirements with alternative 4, with the following exceptions:

1. how vessel speed is defined;
2. the time frame during which speed restrictions are in effect;
3. the time frame during which whale waters are in effect; and
4. access for cruise ships and tour vessels in the East Arm.

Vessel Speed. Vessel speed limits would be similar to those described for alternative 4, including a 13 knot limit for cruise ships (vessels greater than or equal to 262 feet [80 meters]) throughout Glacier Bay. The difference would be that speed would be based on "over the ground speed" rather than "through the water speed" for all vessel classes. Ground speed does not account for water currents, but rather is based on the rate of travel in relation to a fixed point on the ground or the bottom of the water body.

The time frame during which vessel speed limits would be in effect would be year-round for vessels greater than or equal to 262 feet (80 meters) and May 15 through September 30 for vessels less than 262 feet. Prohibited from May 15 through September 30 would be operating a vessel at more than 10 knots speed over the ground when the superintendent has designated that as the maximum speed due to the presence of whales.

Whale Waters. Designated whale waters would be the same as those for alternative 4 (only waters of lower Glacier Bay), except that the effective timeframe would be May 15 through September 30 and, again, speed would be measured over the ground (rather than through the water)

Vessel Routes and Destinations (Including Non-Motorized Waters). Under alternative 5, vessel operators would be under the same requirements as currently exist with respect to vessel routes. Likewise, non-motorized waters would be the same as currently exist, with the addition of the following: Beardslee Entrance and the entrance to Adams Inlet, Dundas Bay would be closed to cruise ships and the wilderness waters of Dundas Bay

would be closed to tour vessels (see figure 4). As with alternative 4, the required 0.25 mile distance from harbor seals in Johns Hopkins Inlet would be applied year-round.

Environmental Effects

Under all alternatives, vessel traffic would result in air and water pollution, disturb marine birds and mammals (including the threatened humpback whale), and reduce experiences for some visitors that travel in both motorized and non-motorized vessels (such as kayaks) and that hike along the shorelines. Collisions between vessels and humpback whales and other marine mammals would occur occasionally.

Most of the effects are similar among the five alternatives, in terms of overall impact conclusions (i.e., negligible, minor, moderate, or major). Most adverse effects would occur in direct proportion to the number of vessels. Alternatives 2 and 4 have lower vessel numbers than the other alternatives and, in most cases, the magnitude of environmental effects also would be lower than would be expected for the other alternatives. Alternative 2 would allow the fewest private vessel use days among the alternatives, while alternative 4 would allow the fewest cruise ships. Alternative 3 could allow an increase of up to 184 cruise ships, which is the highest number being considered, and would maintain existing levels of tour, charter, and private vessels; therefore, alternative 3 has the highest level of effects on the environment. Conversely, economic benefits and visitor opportunities (in terms of total numbers) would decline with alternatives 2 and 4 due to the lower cruise ship levels.

Physical Environment

Soundscape. Under all alternatives, vessel noise (along with sight) would intrude on the natural soundscape, both on the surface and below the water. Vessel noise would be prevalent underwater in any of the alternatives. Likewise, vessel noise would travel to shorelines and interfere with the natural sounds of wind, rain, waves, birds, rivers, and streams. Alternative 3 would cause the most underwater vessel noise, assuming an increase in cruise ships. This alternative would eliminate days when the natural soundscape is not altered by cruise ships during the summer months. Alternatives 4 and 5 would reduce vessel noise because of the requirement that cruise ships travel at 13 knots throughout Glacier Bay.

Air Quality. Under all alternatives, the primary concern related to air quality is the potential for stack emissions from vessels to leave a visible plume and/or create haze. Such events are known to occur intermittently under the current situation, although the

frequency of such events is unknown. Air emissions are highly dependent of vessel types and numbers. Cruise ships produce the highest point source emission but also tend to have the highest level of emission control technology. Private vessels emit much less exhaust, but they can travel to the more remote places of Glacier and Dundas Bays.

Assuming an increase in cruise ship numbers, cruise ship levels under alternative 3 would produce the highest annual emissions, increasing the number of times when smoke plumes would be visible. However, cruise ship numbers would not be increased unless studies showed that such increases would be consistent with protecting park and preserve resources, including air quality. Alternative 4 would result in a moderate effect, due to lower vessel numbers. The emissions of nitrogen oxides in Glacier Bay under all alternatives except alternative 4 would be above the 250-tons-per-year thresholds; however, based on the size of the area, the fact that all the sources are mobile and dispersed, and using Juneau's air quality for comparison, it is unlikely that these emissions would exceed air quality standards. Proposed speed restrictions and quota changes under alternatives 4 and 5 could reduce visibility problems, although increases to private vessel quotas under these alternatives would off-set some of this improvement.

Water Quality. The potential major effect to water quality would occur in the unlikely event of a large oil or fuel spill. While the analysis determined that such a spill is very unlikely, the addition or reduction in vessels entering Glacier Bay may incrementally increase or decrease, respectively, the likelihood of the event over the long term. Eliminating tour vessels from Dundas Bay would reduce risks of accidents for these vessels in that area, which includes several areas of shallow waters and other navigational hazards.

Biological Environment

Threatened and Endangered Species. All alternatives would cause some individual whales and sea lions to move away from passing vessels in Glacier Bay or Dundas Bay; however, because whale distribution has been shown to be more a factor of prey abundance than avoidance of vessels, overall effects are expected to be at the individual level and, therefore, minor. Collisions with ships would be rare, but cannot be ruled out under any of the alternatives and, over time, is probably inevitable. Killing a humpback whale would be considered a major effect, even though the level of effect would still be at the individual level and would not be sufficiently severe to counter the general increasing trend in humpback whale populations. The risk and potential frequency of such collisions increases with vessel traffic

increases, so alternative 3 would have the highest potential level of risk for whale deaths due to vessel strikes. Still, the current system of monitoring whale locations and establishing temporary whale waters would remain an effective approach to protecting whales while avoiding unwarranted restrictions. Alternatives 4 and 5 include speed restrictions to 13 knots for cruise ships, a speed that has been shown to greatly reduce the likelihood of ship/whale collisions that result in whale mortality. Alternative 4 also reduces cruise ship numbers by over one-third the amount currently allowed, so the likelihood of collisions with humpback whales is lowest under alternative 4.

Marine Mammals. Under all alternatives, marine mammals would be disturbed by vessel traffic. Vessel traffic would cause individuals to avoid areas of high vessel use. Most marine mammals are highly mobile and able to avoid vessels, but individuals may be struck and injured or killed by vessels. The context of effects is expected to be at the individual level, rather than the population level, with the possible exception of harbor seals, whose populations in Glacier Bay are declining.

Marine Birds and Raptors. Vessel traffic would disturb concentration areas of brood-rearing harlequin ducks, molting waterfowl, and foraging marbled murrelets. These species are particularly sensitive to vessel traffic and are expected to experience potential local population declines. Alternative 5, which has the highest level of private vessel use days, would also have the greatest potential for disturbing shore birds and colonial nesting birds, since these vessels can travel closer to shore than larger vessels.

Marine Fishes. Some fish may avoid areas near vessels, but no major effects are expected.

Coastal/Shoreline Environmental and Biological Communities. Implementation of any of the alternatives would have a minor effect on coastal/shoreline communities.

Human Environment

Cultural Resources. From the perspective of the Huna Tlingit (scoping), vessel traffic affects ethnographic resources in the park and preserve by reducing the quality of resources and, thus, degradation of the Huna Tlingit ancestral homeland.

Visitor Experience. Visitor opportunities would change among the alternatives in three primary ways. First, since more than 85% of visitors to Glacier Bay experience the park and preserve on a cruise ship, changes in the numbers of cruise ships allowed would greatly affect opportunities for the most common method of viewing the Bay. Second, providing opportunity in the form of cruise ship entry also removes

opportunities and reduces the quality of visits for people who wish to experience the Bay without cruise ships. Third, alternative 4 would increase opportunities for solitude and quiet in Dundas Bay and the East Arm of Glacier Bay by closing them to tour vessels. In addition, alternative 4 would limit charter vessels to three per day. Alternative 5 would provide more opportunities for charter vessels to use Dundas Bay by providing flexibility to allow more than three charters on any particular day, so long as an average of three from June to August is not exceeded.

Visitor experience would change among the alternatives in proportion to vessel numbers and distribution. Cruise ships and other vessels can detract from the feeling of solitude and wilderness for some backcountry users, including hikers and kayakers. Alternative 3 has the highest potential to reduce backcountry experiences due to cruise ships. Alternative 5 would also reduce some backcountry experiences due to the increase in private vessel use. Private vessels can travel to more remote places and are the most prevalent vessel type in both Dundas and Glacier Bays. Therefore, they are the most likely to be seen and heard by backcountry visitors.

Vessel Use and Safety. Risks of major vessel accidents resulting in large fuel spills and major loss of life are expected to be very low. However, if a major spill were to occur the effects would likely be major. Occasional groundings with associated small fuel leaks would be expected under any of the alternatives.

Wilderness Resources. The sights and sounds of vessel traffic would change the naturalness of some wilderness areas (which include essentially all shoreline areas of Glacier and Dundas Bays). Alternative 4 would eliminate tour vessel use in Dundas Bay, which would increase the naturalness of shoreline areas.

Local and Regional Socioeconomics. Alternative 2 would reduce direct and indirect spending by cruise lines and passengers, and the associated fees and taxes paid by cruise ship companies. Alternative 3 would benefit local communities and cruise ship ports of call by increasing cruise ship entries. Alternatives 2 and 4 could result in lost employment and local incomes due to the loss of cruise ship revenues and related employment. Alternative 4 would reduce charter and tour vessel entries, as well as associated employment.

Cumulative Effects

Other actions that may contribute to environmental effects outlined in the EIS include:

- backcountry use and a backcountry management plan currently being prepared for Glacier Bay National Park and Preserve.
- commercial fishing.
- administrative vessels, including research vessels and NPS vessels.
- vessel traffic outside of Glacier Bay and Dundas Bay.

The effects discussed in the EIS would be additive to the effects caused by these other actions. However, based on the analysis presented in the EIS, vessel quotas and operating requirements are not expected to cause significant cumulative effects.

Conclusions Regarding Impairment

With regard to NPS management policies, one of the most important factors in preparing an effects analysis in an EIS is the determination of whether an action would result in "impairment" to the park and preserve's resources. Impairment, as it applies to the lands managed by the Park Service, is derived from the text of the Organic Act's mandate to leave resources "unimpaired for the enjoyment of future generations." None of the alternatives analyzed resulted in effects on park and preserve resources or values that constitute impairment. In general, only some major impacts can result in impairment, but it is dependent on the context, severity, duration, and timing of the effects. Negligible, minor, or moderate effects are not likely to lead to impairment. The effects of a proposed action would be considered impairment if 1) a native species would be lost or could no longer sustain a viable population in the park; 2) ecological processes would be diminished such that they were permanently disrupted in a large portion of the park and preserve; 3) resources would be diminished to the point that the public could no longer have the opportunity to enjoy them; and 4) if the park and preserve could not attain the goals set out in its management plans. Based on the analysis presented in the draft EIS, none of these conditions would occur.

TABLE 4, SUMMARY OF DIRECT AND INDIRECT EFFECTS BY RESOURCE FOR EACH ALTERNATIVE

ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4	ALTERNATIVE 5
PHYSICAL ENVIRONMENT				
Soundscape				
Vessel noise would intrude on the natural soundscape on the surface and underwater. Shoreline areas would be subjected to vessel noise, potentially interfering with visitor enjoyment of the natural soundscape. Overall, vessel noise is considered consistent with park and preserve resources and values.	Fewer cruise ships, charter, and private vessels would reduce human-caused sounds, particularly along shorelines, where private vessels are more likely to travel.	Assuming 184 cruise ships during the summer, the underwater soundscape would be subjected to four cruise ship passings each day, every day, during summer. Other vessel levels and operating requirements and associated human-caused noise would be the same as alternative 1.	The East Arm of Glacier Bay and lower Dundas Bay would be improved by limiting charter vessels and eliminating tour vessels. Reducing cruise ship speeds to 13 knots would greatly reduce underwater noise levels.	Increases in private vessels would increase vessel noise along shorelines and in the more remote places of Glacier Bay.
Air Quality				
Under certain weather conditions (calm with a temperature inversion), stack emissions would be visible and could linger for several hours.	Fewer cruise ships would reduce the frequency of haze or stack emissions.	Studies would need to demonstrate that air quality would not be significantly degraded before increasing cruise ships. A 32% increase in cruise ships would greatly increase the frequency of visible stack emissions.	Speed restrictions on cruise ships and Lower vessel numbers would reduce emissions and visible plume events. Closure of the East Arm to tour vessels could improve visibility there.	As with alternative 4, speed restrictions would reduce air emissions, but visible plumes are still expected to occur under certain weather conditions. Increased private vessels would increase air emissions near shorelines.
Water Quality				
Effects would be minor since water quality impacts from spills would be short-term, localized, and the spill response capability is high. A major spill in ice-filled waters is unlikely, but would be a major effect since spill response would not be possible.	Effects not discernable from alternative 1. Effects related to discharge of bilge water and vessel grounding or collision would be incrementally lower due to the reduced number of cruise ships.	Should cruise ship numbers be increased, then an associated increase in inadvertent discharges into the water would occur. The risk of a major accident would increase, but still remain very low.	Similar to alternative 1; could result in a lower level of risk of inadvertent discharge of bilge water. Dundas Bay would benefit with restriction of tour vessels.	Effects would be simlar to alternative 1. Restriciton on tour vessels in Dundas Bay would reduce spill potential in those areas.

TABLE 4, SUMMARY OF DIRECT AND INDIRECT EFFECTS BY RESOURCE FOR EACH ALTERNATIVE				
ALTERNATIVE 1	**ALTERNATIVE 2**	**ALTERNATIVE 3**	**ALTERNATIVE 4**	**ALTERNATIVE 5**
BIOLOGICAL ENVIRONMENT				
Threatened and Endangered Species				
Vessel traffic would continue to adversely affect both humpback whale and Steller sea lions. Effects would be at the level of individual and not the population. Humpback whales would continue to be disturbed by the sight and sounds of vessels. Collisions with cruise ships would be rare but, over time, would be unavoidable. Existing regulations to protect whales and sea lions would remain in place.	Fewer cruise ships would lower exposure to noise and risk of collisions.	Increasing cruise ship numbers would increase associated noise exposure and risk of collisions.	The combination of reducing summer cruise ship numbers and speed would greatly reduce noise exposure and the risk of collision. Humpback whales would still be exposed to vessel noise from private vessels, which would slightly increase. Restrictions in Dundas Bay would benefit whale use there.	Speed reductions for cruise ships would greatly reduce noise and the risk of collision. Increasing private vessels would increase non-lethal injuries to humpback whales. Such events are expected to be rare but unavoidable.
Marine Mammals				
Vessel traffic may contribute to reported declines in harbor seal populations. Effects on Minke whales would be similar to those described for humpback whale. Other marine mammals would avoid vessel traffic but would otherwise not be harmed.	Similar to alternative 1, but slightly decreased chances of distribution shifts or animal collisions due to lower vessel numbers.	Similar to alternative 1, but potentially increased disturbance if cruise ship numbers are increased. Populations are expected to remain stable.	Much lower frequency of disturbance due to speed limits, vessel reductions, and restrictions at Dundas Bay and the East Arm. Additional protection for harbor seals in Johns Hopkins Inlet would reduce effects. Expanding seasonal restrictions would increase protection during early and late summer.	Increasing private boats would increase disturbance to marine mammals. Expanding seasonal restrictions would increase protection during early and late summer.

TABLE 4, SUMMARY OF DIRECT AND INDIRECT EFFECTS BY RESOURCE FOR EACH ALTERNATIVE				
ALTERNATIVE 1	**ALTERNATIVE 2**	**ALTERNATIVE 3**	**ALTERNATIVE 4**	**ALTERNATIVE 5**
BIOLOGICAL ENVIRONMENT (continued)				
Marine Birds and Raptors				
Vessel traffic in Sitakiday Narrows, Reid Inlet, the East Arm, and Dundas Bay would continue to disturb murrelets, molting waterfowl, and breeding harlequin ducks.	Overall effects would be similar to alternative 1. The amount of disturbances would decline slightly.	Overall effect would be similar to alternative 1. The amount of disturbances would increase if cruise ship numbers are increased.	Reduced vessel traffic would provide a corresponding reduction in vessel disturbance on marine birds.	Increases in private vessels, which can venture into remote bays and inlets, would increase disturbance to molting waterfowl and harlequin ducks.
Marine Fish				
Vessel traffic could displace some fish, but overall, the current level of vessel traffic has not been found to seriously disrupt fish populations.	Effects not discernable from alternative 1.	Effects not discernable from alternative 1.	Effects not discernable from alternative 1.	Effects not discernable from alternative 1.
Coastal/Shoreline Environment and Biological Communities				
Effects to shoreline would be minor because current vessel traffic does not cause significant erosion of shorelines. Effects to the biological shoreline communities would be minor. Individual beaches may experience some erosion and sediment suspension from vessel traffic.	Effects not discernable from alternative 1.	Effects not discernable from alternative 1.	Similar to alternative 1. Sediment erosion, re-suspension, or relocation would be slightly greater than current conditions due to a slight increase in private vessels.	Similar to alternative 1. Higher number of private vessels would have the potential to alter the shoreline to a greater extent due to vessel wakes.

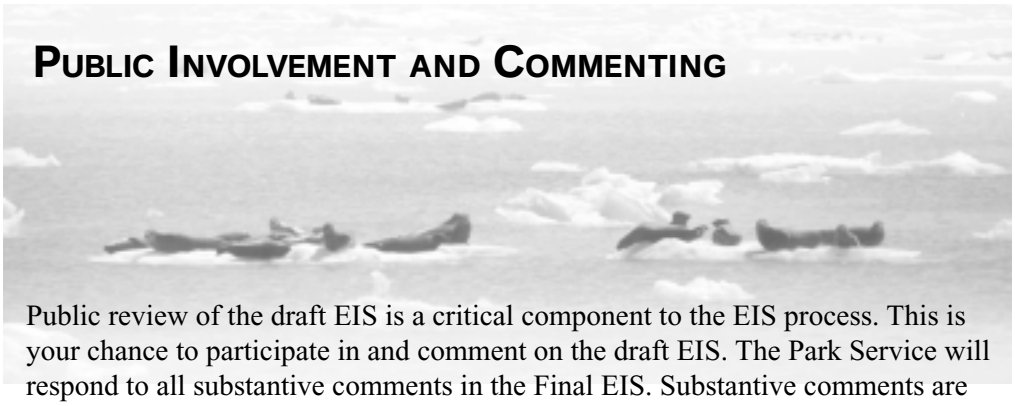
TABLE 4, SUMMARY OF DIRECT AND INDIRECT EFFECTS BY RESOURCE FOR EACH ALTERNATIVE

ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4	ALTERNATIVE 5
HUMAN ENVIRONMENT				
Cultural Resources				
Effects to archaeological and historic resources would be negligible because resources would remain eligible for the National Register of Historic Places. Effects to ethnographic resources would be moderate since the project would potentially affect the integrity of traditional cultural properties.	Effects not discernable from alternative 1.	Increasing cruise ship numbers to two per day, every day, during the summer would eliminate opportunities to undertake traditional activities in the central portions of Glacier Bay without the presence of a cruise ship.	Most effects not discernable from alternative 1. Effects to cultural landscapes would be minor due to longer restricted-entry season, slower vessel speeds, and additional restricted waters.	Most effects not discernable from alternative 1. Effects to cultural landscapes would be moderate because alternative 5 would allow more private vessels.
Visitor Experience				
Effects would be moderate for backcountry visitors because the presence of motorized vessels could lead to potential loss of opportunity to experience solitude.	Effects would be major because a 30% reduction in cruise ships would decrease the opportunity for passengers to experience Glacier Bay.	Effects would be minor for charter and private vessel passengers and major for backcountry visitors because of the loss of opportunities for solitude.	Effects would be major to cruise ship passengers due to reduced cruise ship and tour vessel entries, and moderate for backcountry users due to a decrease of 34% in the number of cruise ships.	Effects would be moderate due to fewer numbers of cruise ships, but increases in private vessels would detract from wilderness experience for backcountry visitors.
Vessel Use and Safety				
Effects would be negligible because controls on vessel entry strictly limit the density of vessels in Glacier Bay, but limited congestion would continue to occur at Bartlett Cove and Tarr Inlet.	Effects not discernable from alternative 1.	Risks of vessel accidents would increase, but would remain minor, since overall vessel density would remain low.	Effects would be positive because reduced vessel entries and speed limits would increase vessel safety and decrease vessel traffic. Eliminating tour vessels from Dundas Bay would eliminate the current risks associated with operating large vessels in relatively shallow areas. Formally defining cruise ship routes would significantly reduce the risk of groundings and potential fuel spills. Reducing cruise ship speed would further reduce the currently low risk of accidents.	Formally designating cruise ship routes and reducing speeds would further reduce the currently low risk of accidents.

TABLE 4, SUMMARY OF DIRECT AND INDIRECT EFFECTS BY RESOURCE FOR EACH ALTERNATIVE

ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4	ALTERNATIVE 5
Wilderness Resources				
Effects would be minor for most areas and moderate for concentrated use areas, such as Johns Hopkins and Tarr Inlets, where vessel noise and air pollution would be heightened. Most effects would occur along shorelines.	Effects not discernable from alternative 1.	Increasing cruise ships to 184 during summer would reduce the naturalness of wilderness near the tidewater glaciers, where cruise ships spend most of their time while at Glacier Bay.	Reduced vessel numbers would reduce vessel exposures to wilderness. Reducing cruise ship speed limits would reduce vessel emissions and noise, but would also increase the time cruise ships are within Glacier Bay.	Effects would be similar to alternative 1, but with increased protection to Dundas Bay. As with alternative 4, reducing speed limits would reduce vessel emissions and noise, but would also increase the time cruise ships are within Glacier Bay.
Local and Regional Socioeconomies				
Effects to the economies of neighboring communities and southeast Alaska would be negligible, as would the effects to Glacier Bay-dependant businesses.	Effects would be minor to moderate due to decrease in income and employment for communities with economic linkages to Glacier Bay. Reduced local spending associated with private vessels. Moderate effects would be expected for Gustavus where personal income reductions would be expected to be between 5% and 10%.	Effects would be positive due to increase in cruise ships; effects on local communities would be negligible with the exception of Gustavus, which would benefit from increased park and preserve revenues.	Effects would minor to moderate due to income and employment decrease related to vessel decreases and reduced local spending associated with private vessels. Moderate effects would be expected for Gustavus where personal income reductions would be expected to be between 5% and 10%.	Effects would be similar to alternative 1; changes to Dundas Bay management could have a minor positive effect on commercial users.

PUBLIC INVOLVEMENT AND COMMENTING



Public review of the draft EIS is a critical component to the EIS process. This is your chance to participate in and comment on the draft EIS. The Park Service will respond to all substantive comments in the Final EIS. Substantive comments are those that raise, debate, or question a point of fact or policy. Examples include comments that:

- Question the accuracy of information in the draft EIS.
- Question the adequacy of the environmental analysis.
- Present reasonable alternatives other than those presented in the EIS.

Comments simply in favor of or against the proposed action or alternatives are not considered substantive. The Park Service is accepting comments on the draft EIS until May 14, 2003. Comments can be made in the following ways:

- At the park and preserve's website at http://www.nps.gov/glba. Click on "Vessel Management Draft EIS" under "News & Events."
- At a public meeting, either spoken in private to a court reporter, spoken during a open public commenting session, or in writing. The Park Service will host open houses/public meetings in mid-April in the following locations: Anchorage, Juneau, Hoonah, Gustavus, Pelican, and Elfin Cove, Alaska, and Seattle, Washington.
- In writing via mail. Please submit your written comments to:

Glacier Bay National Park and Preserve Vessel DEIS
CO/Nancy Swanton
EIS Project Manager
2525 Gamble Street
Anchorage, Alaska 99503-2892

Your comments, including your name and address, may be made available for public review pursuant to the provisions of the Freedom of Information Act (FOIA), and the regulations implementing NEPA (40 CFR 1506.6(f)).

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saved by the American people
so that all may experience our heritage.

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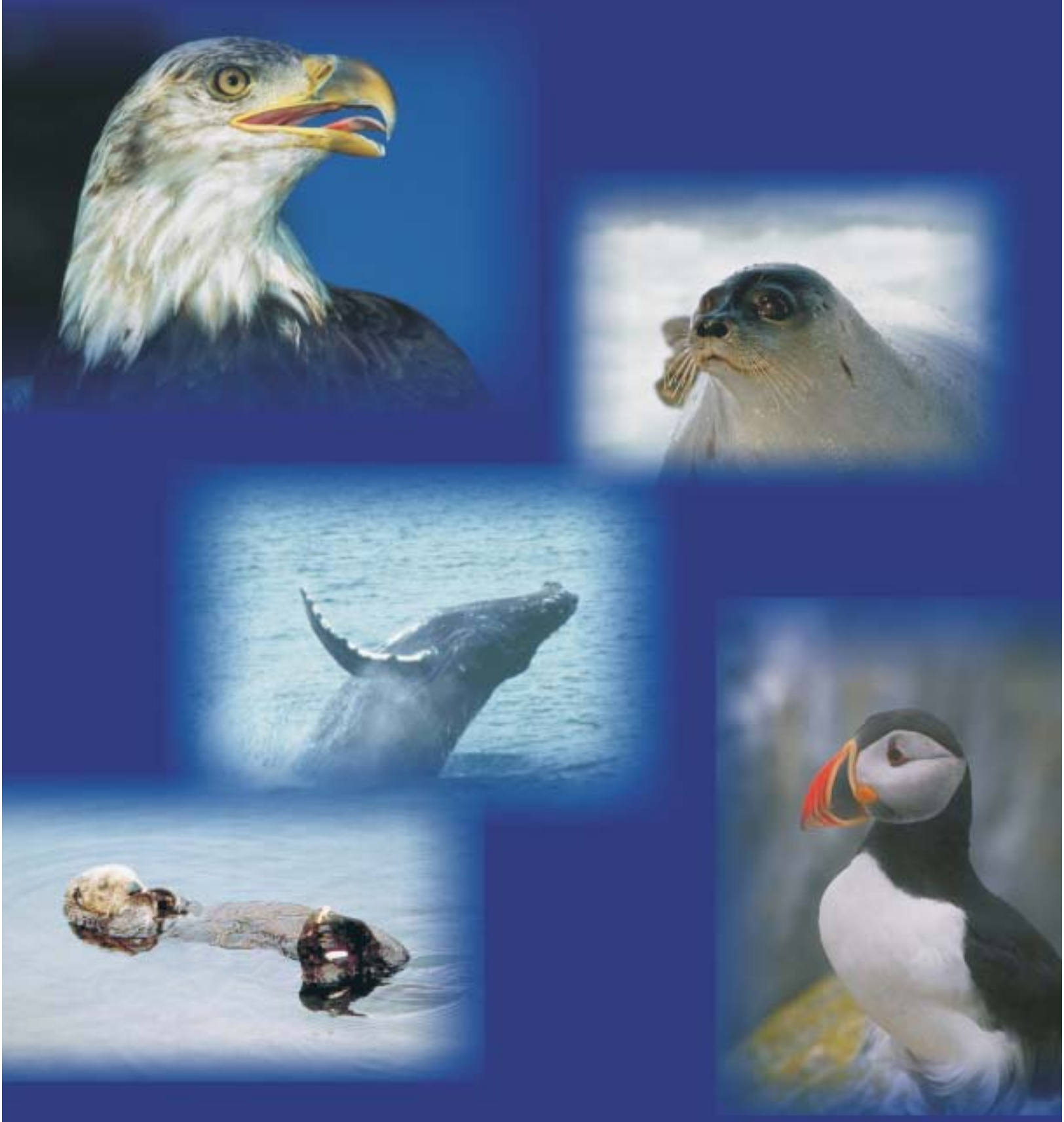
March 2003



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